

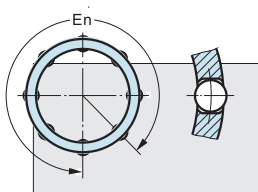
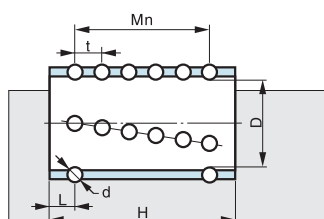


SF-60/61/62 直线轴承

Retainer bearing

该产品是以铜合金、硬质合金、POM树脂为保持架，表面加工有规则的孔穴，在其孔穴中镶嵌入滚动钢球，孔口用油槽圆周锁球工艺。产品被广泛应用冷冲模滚动模架、高精度机床、机床附件，以及高精度轴向或轴径向同时运动场合。

SF-60/61/62 Retainer bearing made copper alloy, hard alloy and POM colophony as holding frame, the surface was processed some well-regulated holes, and embed the rolling steel balls in the holes, Orifice used technics of oil groove circle locked ball. The products are widely used in punching machine, die machine, high precision machine which need rotation and vertical motion.



SF-60: Brass +Steel ball
SF-61: POM +Steel ball
SF-62: Aluminium+Steel ball

※标准产品标注方式: Standard Bushing Label Mode SF-6□ 1950

单位Unit: mm

型号规格 Designation	D	H	d	E _N	M _N	Balls	t	T
SF-6□ 1950	19	50	3	12	8	96	5.5	5.75
SF-6□ 1960		60			10	120		5.25
SF-6□ 2050	20	50			8	96		5.75
SF-6□ 2060		60			10	120		5.25
SF-6□ 2250	22	50		14	8	112	5.5	5.75
SF-6□ 2260		60			10	140		5.25
SF-6□ 2360	23	60			10	140		5.25
SF-6□ 2475	24	75		16	13	208	5.45	4.80
SF-6□ 2550	25	50			8	128	5.5	5.75
SF-6□ 2560		60			10	160		5.25
SF-6□ 2775	27	75			13	208	5.45	4.80
SF-6□ 2860	28	60	4	14	8	112	6.5	7.25
SF-6□ 2875		75			11	154		5.0
SF-6□ 3060	30	60			8	112		7.25
SF-6□ 3075		75			11	154		5.0
SF-6□ 3260	32	60		16	8	128	8.0	7.25
SF-6□ 3275		75			11	176		5.0
SF-6□ 3685	36	85			12	192		6.75
SF-6□ 3690		90			13	208		6.0
SF-6□ 3870	38	70			8	128	7.9	7.0
SF-6□ 3890		90			11	176		5.5
SF-6□ 4090	40	90			11	176	8.0	5.5
SF-6□ 4590		90			11	198		5.5
SF-6□ 45110	45	110	5	18	13	234	8.0	7.0
SF-6□ 5090		90			11	220		5.5
SF-6□ 50110	50	110			13	260		7.0
SF-6□ 6090		90		22	11	242	8.0	5.5
SF-6□ 60110	60	110			13	286		7.0
SF-6□ 80130	80	130			15	420		9.0

SF-FD1 含铜四氟软带

Copper PTFE soft strip

该产品是以聚四氟乙烯为主要原料，填充铜粉等耐磨材料，经模具压制烧结而成，具有良好的耐磨性，摩擦系数低，在有润滑油和无油润滑条件下都能正常使用。产品被广泛应用于汽车减震器，汽车活塞环。

SF-FD1 Copper PTFE soft strip as main material is made of filling copper powder and wear resistance material pressing and agglomeration, it has low wear resistance and low friction, it can work with or without oil. The products have been widely used in automobile shake absorber and



※技术参数：Technical Data

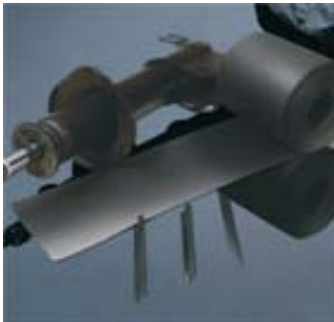
性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	80N/mm ²
	动载 Dynamic load	40N/mm ²
最高线速度 V Max Sliding Speed		1.5m/s
抗拉强度 Tensile Strength		18N/mm ²
延伸率 Extension Rate		100%
摩擦系数 μ Friction coefficient		≤ 0.25
使用温度 Working temperature		-100℃ ~ +250℃
热膨胀系数 Coefficient of thermal expansion		8 1 0 ⁻⁵ /k

SF-FD2 含石墨四氟软带

GRAPHITE PTFE soft strip

该产品是以聚四氟乙烯为主要原料，填充石墨等耐磨材料，经模具压制烧结而成，具有良好的韧性，耐磨性。产品被广泛应用于汽车减震器。

Graphite PTFE soft strip with PTFE as main material is made though filling wear proof material such as graphite though polishing, pressing and agglomeration, it has good tenacity and wearing performance. The products have been widely used in automobile absorber.



※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	80N/mm ²
	动载 Dynamic load	40N/mm ²
最高线速度 V Max Sliding Speed		1.5m/s
抗拉强度 Tensile Strength		13.2N/mm ²
延伸率 Extension Rate		200%
摩擦系数 μ Friction coefficient		≤ 0.25
使用温度 Working temperature		-100℃ ~ +250℃
热膨胀系数 Coefficient of thermal expansion		8 1 0 ⁻⁵ /k

SF-FD3 改性四氟软带

Modified PTFE soft strip

该产品是以聚四氟乙烯为主要原料，填充特殊的耐磨材料，经模具压制烧结而成，具有良好的耐磨性，耐冲击性及密封性能。产品被广泛应用于加油机流量泵，或密封环使用。

SF-FD3 modified soft strip is based on PTFE and filled into specific lubricant through a combination of mold pressing and sintering. It is of high wear resistance; good anti impact ness and good performance in airproof. at present it is widely applied in flow pump of the greasing machinery



※技术参数：Technical Data

性能指标 Performance index		数据 Data
最大承载 P Max Load Capacity	静载 Static load	80N/mm ²
	动载 Dynamic load	40N/mm ²
最高线速度 V Max Sliding Speed		1.5m/s
抗拉强度 Tensile Strength		20N/mm ²
延伸率 Extension Rate		250%
摩擦系数 μ Friction coefficient		≤ 0.25
使用温度 Working temperature		-100℃ ~ +250℃
热膨胀系数 Coefficient of thermal expansion		8 1 0 ⁻⁵ /k

卷制轴套的检验方法

Methed of wrapped bushes measurement



► 通用外径检验方法（ISO3547-2: 1999 Test B）:

Common test method of outside diameter（ISO3547-2: 1999 Test B）:

轴套用手压入环规通端（最大用力250N），通过

Press the bushes into the GO ring gauge and then push them through with hand pressure（maximum force 250N）

轴套用同样方法与同样力，压入环规止端，不通过

On the other hand with the same force， It shall not be possible for them to go into the NOGO ring gauge



► 通用的内径检验方法（ISO3547-2: 1999 Test C）:

Common test method of inner diameter test（ISO3547-2: 1999 Test C）:

检验内径，轴承压入环规，塞规通端通过用较小力，塞规止端通不过用力最大不超过250N。

To check the inner diameter, the bush is to be press into a ring gauge.The GO plug gauge shall be inserted by a minimum effort, The NOGO Plug gauge shall not be insert by mutual pressure（maximum force 250N）

（注意：当轴承压入环规，轴承外径可能会被永久减小）

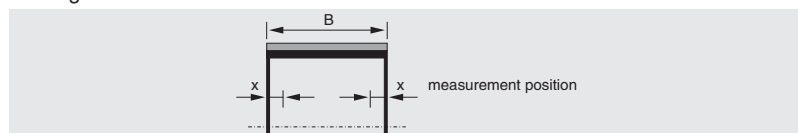
Note: When the bush is pressed into the ring gague, It is possible that There will be a permanent reduction in the outside diameter）



► 通用的壁厚测量方法：（SBS公司测量标准）

Common method of wall thickness measurement:

The wall thickness is measured at one,two or three positions axially according to the bearing dimensions.



B [mm]	X [mm]	measurement position
$B \leq 15$	$B/2$	1
$15 < B \leq 50$	4	2
$50 < B \leq 90$	6 and $B/2$	3
$B > 90$	8 and $B/2$	3

轴承安装设计

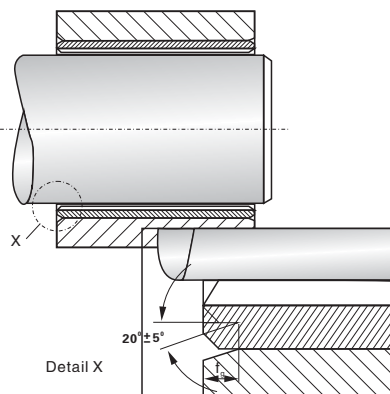
Densign Of Bearing Arrangement

※直套 Cylindrical Bushes

座孔被倒角 $f_6 \times 20$ 5, 使衬套压入座孔变的更加容易。

The housing bore should have a chamfer $f_6 \times 20$ 5, The chamfer makes it easier to press the bushes into the housing.

座孔直径 Housing bore diameter d_6	座孔倒角 Chamfer of housing f_6
$d_6 \leq 30$	0.8 0.3x20 5
$30 < d_6 \leq 80$	1.2 0.4x20 5
$80 < d_6 \leq 180$	1.8 0.8x20 5
$d_6 > 180$	2.5 1.0x20 5

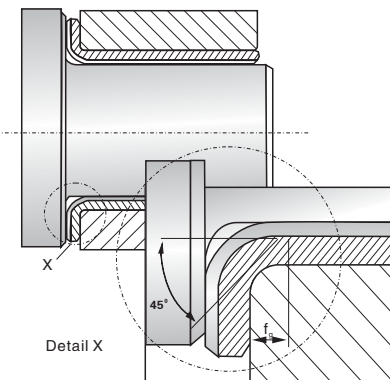


※边套 Flange Bushes

关于 边套, 从 边套口到轴向转换组件必须考虑半径的转变, 切面要有一个足够大的倒角。以防 边套口聚集污垢后仍然可以支持轴向载荷部件的边缘。

The radius at the transition from the radial to the axial Component must be taken into consideration for flange bushes. A sufficiently large chamfer must be provided on the housing to prevent the flanged bushes fouling in the area of the radius. Sufficient support must be provided for the flange in applications with axial loading.

座孔直径 Housing bore diameter d_6	座孔倒角 Chamfer of housing f_6
$d_6 \leq 10$	1.2 0.2x45 5
$d_6 > 10$	1.7 0.2x45 5



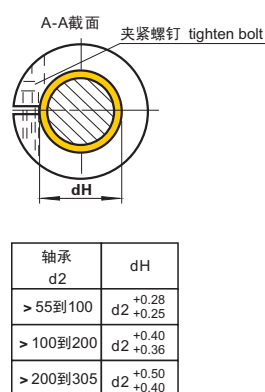
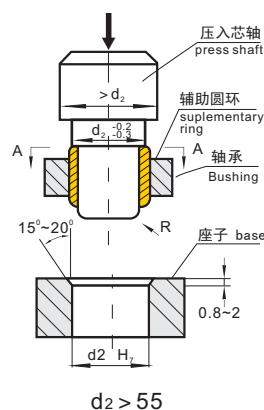
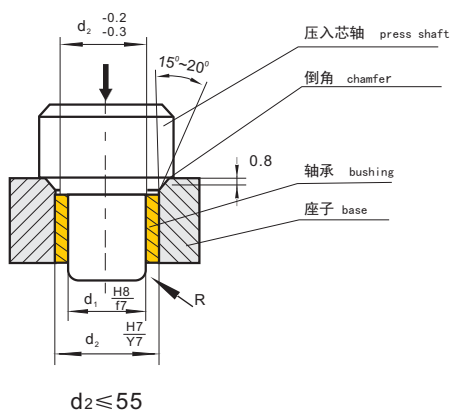
滑动轴承与座孔的装配

The installation of the sliding bushing and the housing

滑动轴承与座孔装配时, 要保证轴承在座孔内不发生转动和轴向移动, 又要使轴承外表面和座孔充分接触, 一般应保证接触面大于85%, 有利于承受载荷和传导摩擦热, 采用较轻级的过盈配合, 既要保证使用时, 轴承不会在座孔内发生相对移动, 又不会使轴承外径过盈量过大致使轴承内孔变形过大为有利于装配, 轴承内外表面应涂以少量油或油脂, 再将轴承均匀压入。

When installing the sliding bushing and the housing, make sure the bushing doesn't rotate or move. The outside surface of the bushing must have a through contact with the housing, in general the connecting part must be over 85%, and this will be good for the load pressure and the conduction of friction heat. Using surplus quantity loosely, that is when it is used the bushing does not move relatively and also the surplus quantity of the bushing outside diameter, will not be too big to cause serious distortion of the bushing inside hole, when installing, it is good to lay a little lubricant, such as oil on the inside and outside surface of the bushing, then press the bushing slowly.

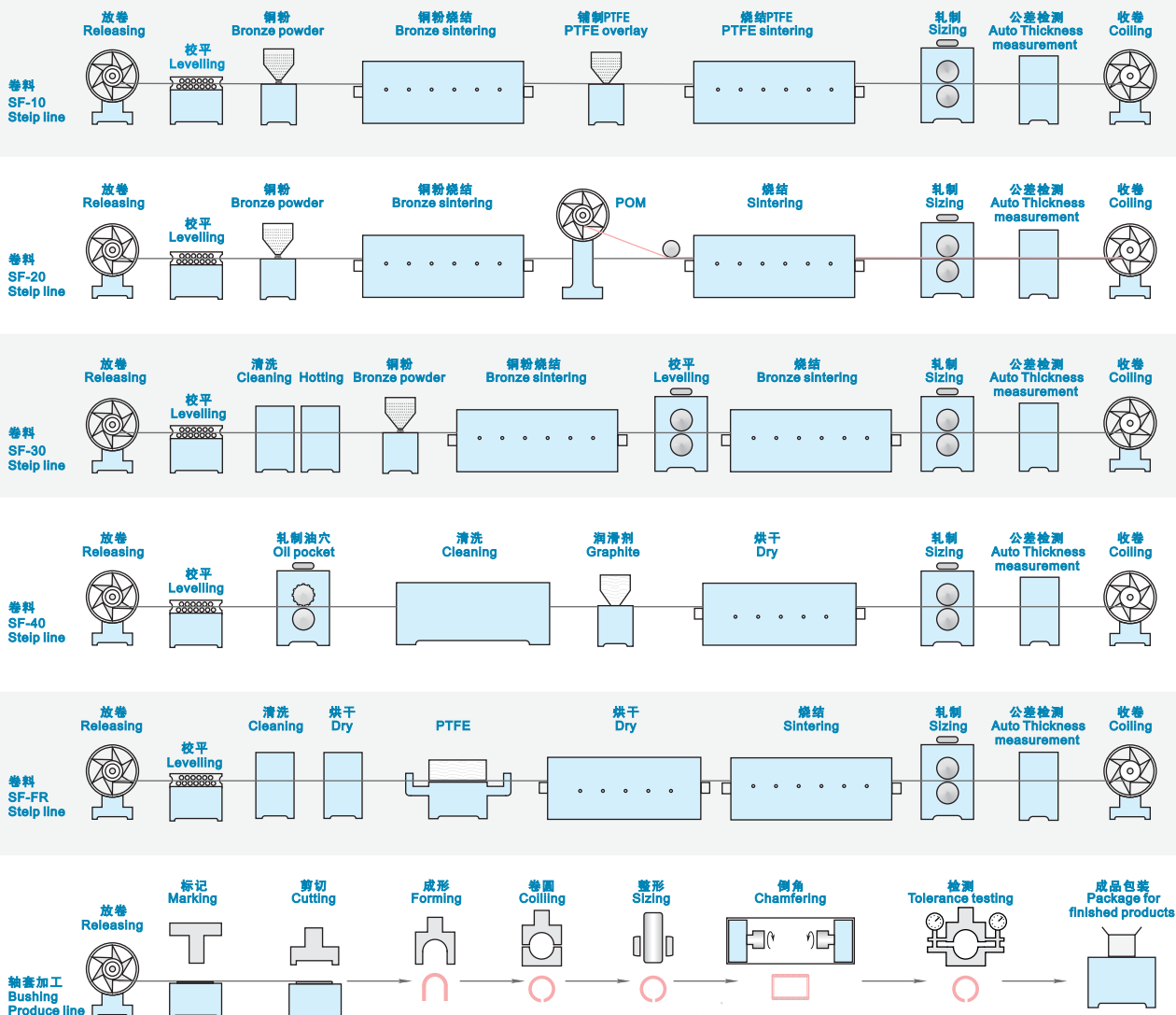
The method of installation as follow



轴承 d_2	dH
> 55到100	d_2 +0.28 +0.25
> 100到200	d_2 +0.40 +0.36
> 200到305	d_2 +0.50 +0.40

卓越的SBS品牌，一直致力于提高产品质量

Made by SBS stands for excellence. It symbolises our consistent endeavour to achieve total quantity in everything we do.



HDM10端面摩擦磨损试验机
HDM10 End-face Friction & Wear Experiment



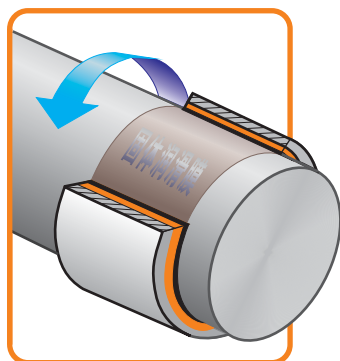
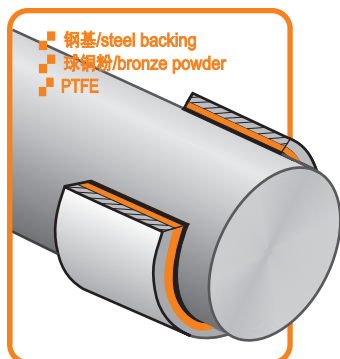
投影仪 Model projector



金相分析仪 Fine texture analysis

无给油轴承工作原理

Self-lubricated Bearing Working Principle



■ 所谓的无给油是指无需加油或少加油，我们研究的目标正是要确保在这种工况下轴承能表现出良好的性能并尽可能的延长其使用寿命；因此无给油轴承也被称为干式轴承、自润滑轴承或者免维护轴承。

Self-lubricated (Oilless) Bearing is the bearing working without lubricant or with marginal lubricant during the operation. Our target is focused on ensuring the bearing with the best performance and longest duration under such conditions. For this reason, the oilless bearing is also called dry bearing, self-lubricated bearing or maintenance free bearing.

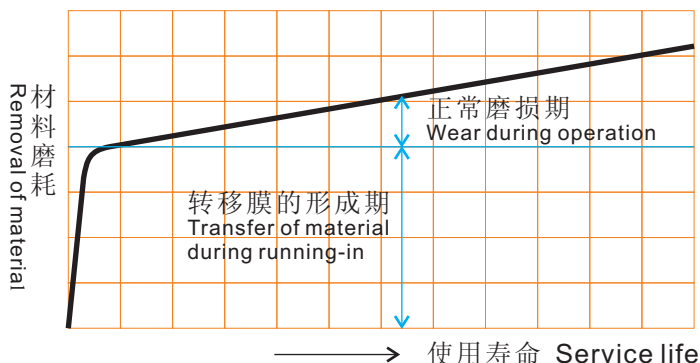
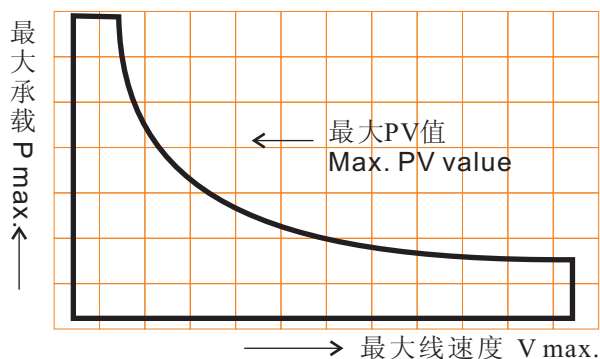
■ 无给油轴承的基本工作原理是，在初期运行阶段轴承表面的PTFE或其他固体润滑剂会转移到对磨件上，形成固体润滑膜，与所谓的含油轴承不同的是，这层固体润滑膜不会因频繁的启动需要再次生成，缩短了磨合期，它隔断了轴承与对磨件的直接接触，降低了摩擦系数，从而延长了轴承的使用寿命，更好地保护了对磨件。

The working principle of such bearing is that during the initial running of the bearing, there will be a solid lubricating film created by the transferring of the PTFE or lubricants from the bearing layer. Comparing to the oil impregnate bearing the formed lubricating film is no need to be recreated due to frequently retarding of the machine, therefore the running-in time is considerably shortened. Good protection and longer duration of the bearing is available with lower friction co-efficient because of indirect contact of the mating surfaces.

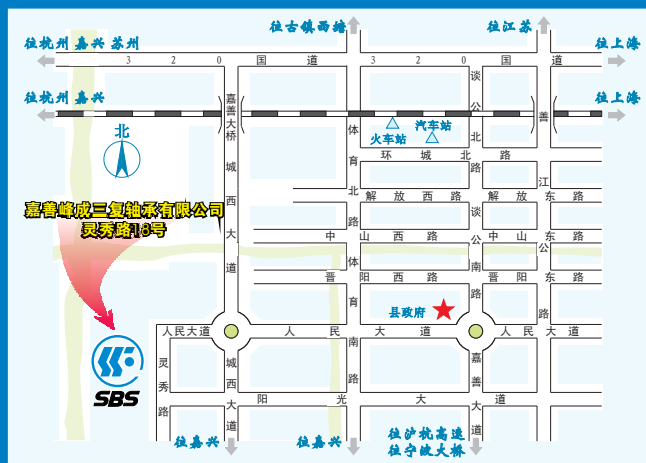
无给油轴承的主要优点

The advantages of Self-lubricated Bearing

- 无需供油装置；
- 无需或大大减少了轴承的维护成本；
- 减少了设备的停机保养；
- 降低了用油成本，减少了润滑油对环境的污染
- 简化了设计及机械构造。
- Oil supplying system is eliminated;
- Maintenance cost is considerably reduced or completely saved;
- Less maintenance of the machinery is needed;
- Save the cost of lubricant and prevent the lubricant pollution;
- Simplify the mechanical design and manufacturing.



嘉善县魏塘镇交通示意图



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